Report of the Northeast Weather Association

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Background:

The Northeast Weather Association (NEWA) has operated in New York since late 1995. It is a private non-profit organization with members who are farmers, food processors, extension staff, Cornell faculty, and others from the agricultural industry in New York. The organization is affiliated with the New York IPM Program at Cornell. The purpose of NEWA is to provide a focus for weather interests of the agricultural industry in New York and neighboring states. NEWA provides a network which connects to privately owned weather instruments and downloads data which is run through research based disease and insect forecast models. The results are made available to members over the internet and via FAX.

Goals for 1998 Funding:

1) Keep the NEWA electronic weather network operational for the 1998 season
2) Solicit new members for NEWA from among fruit, vegetable, field crop, and other appropriate growers.
3) Maintain NEWA's ability to contract with a private weather forecaster for forecast information.
4) Test Wireless Data Links to lessen lightening risks.

Results:

1. Keep the NEWA electronic weather network operational.

During the 1998 growing season NEWA was able to maintain the electronic weather network. NEWA's 4 electronic bulletin board sites (BBS) (Geneva, Canandaigua, Fredonia, and Middletown, Orange County) were consolidated into three sites (Geneva, Canandaigua, and Fredonia) and gathered weather data daily from 45 data loggers. The network was operational on 100 percent of the days between April 1 and October 31, although individual instruments experienced down time from lightning strikes and other problems. These problems were generally remedied within one or two days of occurrence unless damage to the instrument was major, in which case the instrument owner was responsible for repairs. This season proved to be one of the worst for severe weather in NEWA's history. Severe weather hit western and eastern NY on 3 separate occasions and sporadically throughout the season at various sites. Lightning damaged many of the instruments although most were put back on-line within 1-2 days. In the apple region, lightning damaged many of the instruments and some instrument owners did not make repairs.

The data were summarized and entered into various pest forecast models for potatoes, onions, apples, grapes, sweet corn, and tomatoes daily. Degree day accumulations were run for different base temperatures using several degree day models as needed by different crop groups. Weekly sweet corn pheromone trap catch reports were made available on the BBS.

Information was made available to NEWA members either through a daily FAX or the BBS (Bulletin Board). NEWA offered internet access at the Geneva site for the second year and also made the Fredonia site accessible to the internet in 1998 . Many of NEWA's BBS members accessed the information through this means. NEWA provided technical support for setting up and using the BBS software and provided support and troubleshooting to members for weather equipment in the field.

2) Solicit new members for NEWA from among fruit, vegetable, field crop, and other appropriate growers.

An effort was made to recruit new NEWA members through advertisements run in the Agricultural publications in the early spring. Local Extension offices also published stories on NEWA in newsletters and made information available to growers.

NEWA maintained about the same number of members as it did in 1997. The chart below shows the breakdown of FAX and BBS subscribers. Of the NEWA members, there were 18 extension representatives, 8 researchers, 2 consultants, 2 processors, and 28 growers.

Site	*# FAX subscriptions*	*# BBS subscriptions*
Geneva	1	35
Canandaigua	4	0
Fredonia	5	13

In order to attract new members NEWA provided a variety of new forecasting models on the BBS's this year. Alfalfa weevil forecasts were made which could be used in combination with the degree day information by field crops growers and consultants. Some field crops extension staff joined NEWA to try out these models but no farmers from the field crops area have become members. Soil temperature data was recorded at one site this season. The use of an available turf disease forecast was initiated, although there were no loggers near turf and the difficulty in measuring leaf wetness in turf made these forecasts difficult to implement. This system may become available in the future as interested turf producers purchase instruments. Logs were devised for tomato and onion forecast information so that past data could be analyzed at the end of the season. P-day values for determining early blight in potatoes were added. In cooperation with George Abawi, Tomcast, a model which was added for forecasting early blight in tomatoes last year, was evaluated to determine its feasibility in forecasting blight in carrots with positive results.

3) Maintain NEWA's ability to contract with a private weather forecaster for forecast information.

NEWA contracted with Weather Track, a private meteorological firm, for customized agricultural forecasts updated once daily in 1997. These forecasts provided a synopsis, zone forecasts, extended forecasts, confidence level of forecast, and a chart for various forecast parameters for three days. The cost of these forecasts to NEWA rose 35% in 1997. Due to this increase in price other forecast options were pursued in 1998. After discussions with the National Weather Service (NWS) in Buffalo it was decided that the agricultural forecasts could be generated from products issued by the NWS. The NWS meteorologists showed NEWA

personnel where to find these products and NEWA then generated these forecasts updated once daily. These forecast were made available on-line and through the fax. For those members who had BBS access, NEWA also contracted with AccuWeather for forecast graphics including real time radar. Members who logged onto the BBS had access to weather updates. Other products issued by AccuWeather besides graphics were exclusive hour by hour forecast for ten days as well as national summaries and much more. NEWA members can access this forecast information all year not just the growing season.

4) Test Wireless Data Links to lessen lightning damage.

This part of our proposal was not funded for 1998 but due to the extremely severe weather encountered during the 1998 growing season, tests were made on some devices that might potentially limit lightning damage in the future. During and after the first severe outbreak, wireless phone jacks were installed at 6 locations where lightning had caused damage in the past. These devices isolate the modem and the weather monitor from phone line surges which account for at least 90% of problems encountered. Of these six sites, five remained operational for the rest of the season after these devices were installed with no damage to modems or weather equipment. At the sixth site, investigation determined that the damage from lightning was actually caused by a nearby strike which entered the cable from another source - most likely an exposed cable running through a group of trees - and not by a surge through the wireless phone jack device.

Summary

NEWA was able to maintain the electronic weather network in the 1998 growing season with support from NEWA members and with various grants from commodity organizations and other sources. NEWA's membership remained steady in 1998 although new products made available on the network provide opportunities for growth in the future. NEWA continued to contract with private forecasting firms for agricultural weather products which interest our members. Wireless phone jacks could provide relief for phone line surges induced by lightning strikes thus lowering the overall maintenance costs of the network.